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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,517	04/12/2004	Yuan-Sheng Tyan	87804RLO	3334

7590 12/19/2005
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EXAMINER

KEANEY, ELIZABETH MARIE

ART UNIT PAPER NUMBER

2882

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary**Application No.**

10/822,517

Applicant(s)

TYAN ET AL.

Examiner

Elizabeth Keaney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/12/04;11/14/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

Claims 2,13,14,22 and 23 are objected to because of the following informalities:

- Claim 2, line 2: "the anode"; should be --an anode--.
- Claims 13 and 22, line 4: "oxide.."; should be --oxide.--.
- Claims 14 and 23, line 2: "oxides.."; should be --oxides.--.

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Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-28 are rejected under 35 U.S.C. 102(b) as being anticipated by

Hiroyuki (JP 2002-100483).

The Examiner notes that all references to specific line numbers are drawn to the English translation of JP-2002-100483.

Re claims 1,10,11,12,20 and 21: Hiroyuki discloses, in figure 1 and throughout the disclosure, an OLED device comprising:

- a substrate (11);
- a first electrode layer (12a) disposed over the first electrode layer;
- an inorganic short reduction layer (12b) disposed over the inorganic short reduction layer;
- a charge injection layer (13) disposed over the inorganic short reduction layer;
- an organic EL element (14) disposed over the charge injection layer; and
- a charge injection layer (15) disposed over the organic EL element;
- a second electrode layer (16) over the organic EL element,

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- wherein the short reduction layer is selected to have a thickness and a resistivity sufficient to reduce the leakage current and the associated loss of emission efficiency due to shorting defects (Detailed Description, paragraph 24, lines 1-4).

Re claims 11 and 20: Hiroyuki discloses the use of IXO for the inorganic short reduction layer. This material is considered to have a through-thickness resistivity as required by these claims.

Re claim 2: Hiroyuki discloses, in figure 1 and throughout the disclosure, the first electrode layer is an anode (12).

Re claims 3,13 and 22: Hiroyuki discloses the short reduction layer to be selected from indium oxide, gallium oxide, zinc oxide, tin oxide, molybdenum oxide, vanadium oxide, antimony oxide, bismuth oxide, rhenium oxide, tantalum oxide, tungsten oxide, niobium oxide, or nickel oxide (Detailed Description, paragraph 24, line 4).

Re claims 4,14 and 23: Hiroyuki discloses the short reduction layer being a mixture of at least two of the listed oxides (Detailed Description, paragraph 24, line 4).

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Re claims 5,15 and 24: Hiroyuki discloses the short reduction layer being a mixture of at least one of the listed oxide materials, and an electrically insulating oxide, fluoride, nitride or sulfide material (Detailed Description, paragraph 24, line 4).

Re claims 6,16 and 25: Hiroyuki discloses one of the two electrode layers is a transparent conductive oxide layer (Detailed Description, paragraph 24, line 2) and the other electrode is metallic (Detailed Description, paragraph 5, lines 3-4).

Re claims 7,17 and 26: Hiroyuki discloses both electrode layers are metallic and at least one of the two electrode layers is semitransparent to the emitted light (Detailed Description, paragraph 3, lines 2-3 and paragraph 5, lines 3-4).

Re claims 8,9,18,19,27 and 28: Hiroyuki discloses the short reduction layer to be between 20nm and 200nm in thickness (Detailed Description, paragraph 24, line 2).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Patent 6,713,955 discloses the current state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Keaney whose telephone number is (571)272-

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2489. The examiner can normally be reached on Monday, Tuesday, Thursday, Friday 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571)272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Elizabeth Keaney
Examiner
Art Unit 2882



DAVID V. BRUCE
PRIMARY EXAMINER